AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions and listings of claims in the application:

Listing of Claims:

1-8 (Cancelled).

9. (**Currently Amended**) A method for defruiting ~~transponder~~ responses received from transponders by a secondary radar in response to interrogations emitted in a recurrent manner, a recurrence being formed by the interrogation and the responses received in the course of a listening period following the interrogation, the defruiting method, executed by a secondary radar extractor, is applied to a set of a give number N of recurrences, comprises:

determining among all responses received during the N recurrences, those that are synchronous responses;

the synchronous responses being sent to a processing means, the synchronous responses being exploited only if a number P of responses determined as being synchronous, is such that a ratio P/N is greater or at least equal to a giving value k;

wherein the defruiting method ~~comprising:~~comprising a step of testing ~~synchronism of transponder responses,~~for each response received during a give recurrence I, if the response is synchronous with a second response received in another recurrence j, wherein ~~radial speeds of the transponders are between speeds V_{min} and V_{max}, such that~~ a first response received at recurrence i is determined to be synchronous with a second response received in another recurrence j, if:

$$\rho_j \in \left[\rho_i - V_{max} \times (t_j - t_i) - \delta\rho \,;\, \rho_i - V_{min} \times (t_j - t_i) + \delta\rho\right] \text{ when } t_j > t_i \,,$$

or

$$\rho_j \in \left[\rho_i - V_{min} \times \left(t_j - t_i \right) - \delta\rho \; ; \rho_i - V_{max} \times \left(t_j - t_i \right) + \delta\rho \right] \text{ when } t_j < t_i,$$

where:

V_{min} and V_{max} are respectively the fixed minimum and maximum radial speed of the transponders, at least V_{min} or V_{max} being nonzero and constitute a radial speed bin $[V_{min}; V_{max}]$;

ρ_i and ρ_j are respectively the distance at which the transponder response has been detected in recurrence i and in recurrence j;

t_i and t_j are respectively the instant of emission of the interrogation in recurrence i and in recurrence j;

$\delta\rho$ is a parameter defining a tolerance on the measured distances ρ_I and ρ_j;

t_i and t_j are respectively the instant of emission of the interrogation in recurrence i and in recurrence j, and

t_i and t_j are such that $\left| t_i - t_j \right|$ is equal to the duration of the N recurrences corresponding to an azimuthal extent $\Delta\theta$ of the antenna lobe width used by the radar.

10. (Previously Presented) The method as claimed in claim 9, wherein the distance tolerance parameter $\delta\rho$ being set to zero, ρ_I and ρ_j are defined by the following relations:

$$\rho_j \in \left[\rho_i - V_{max} \times \left(t_j - t_i \right) ; \rho_i - V_{min} \times \left(t_j - t_i \right) \right] \text{ when } t_j > t_i \,,$$

or

$$\rho_j \in \left[\rho_i - V_{min} \times \left(t_j - t_i \right) \; ; \rho_i - V_{max} \times \left(t_j - t_i \right) \right] \text{ when } t_j < t_i,.$$

11. (**Currently Amended**) ~~A method~~The method ~~of defruiting transponder responses received from transponders by a secondary radar in response to interrogations emitted by the radar in a recurrent manner, a recurrence being formed by the interrogation and the responses received in the course of a listening period following the interrogation~~, as claimed in claim 9, wherein the step of testing for each response received during a given recurrence i, if the response is synchronous with a second response received in another recurrence j, ~~said method implementing in parallel the defruiting method as claimed in claim 9~~is implemented in parallel with ~~different~~ several radial speed bins [Vmin; Vmax].

12. (Previously Presented) The method as claimed in claim 11, wherein the radial speed bins are contiguous.

13. (Previously Presented) The method as claimed in claim 11, wherein the radial speed bins are equidistributed.

14. (**Currently Amended**) The method as claimed in claim 9, wherein, ~~for receptions corresponding to~~responses received from transponders of aircrafts situated in the far field, t_i and t_j are such that $\left|t_i - t_j\right|$ is defined as being less than or equal ~~than~~ to the duration of the recurrences corresponding to an azimuthal extent corresponding to the effective ~~interrogation~~ reception lobe of the secondary radar defined by both the effective interrogation lobe according to ICAO (International Civil Aviation Organization) standard and the reception lobe according to a secondary radar link budget that limits the width of the lobe.

15. (**Currently Amended**) A defruiting system for transmitting synchronous responses to a secondary radar extractor, said system comprising ~~a~~

~~correlator~~correlation means configured to ~~implement the method of claim 9.~~process a set of a given number N of recurrences and to determine, synchronous responses among all responses received during the N recurrences, said correlation means implementing a step of testing for each response received during a given recurrence i, if the response is synchronous with a second response received in another recurrence j, wherein a first response received at recurrence i is determined to be synchronous with a second response received in another recurrence j, if:

$$\rho_j \in \left[\rho_i - V_{max} \times \left(t_j - t_i\right) ; \rho_i - V_{min} \times \left(t_j - t_i\right)\right] \text{ when } t_j > t_i ,$$

or

$$\rho_j \in \left[\rho_i - V_{min} \times \left(t_j - t_i\right) ; \rho_i - V_{max} \times \left(t_j - t_i\right)\right] \text{ when } t_j < t_i,$$

wherein:

V_{min} and V_{max} are respectively the fixed minimum and maximum radial speed of the transponders, at least V_{min} or V_{max} being nonzero, and constituting a radials peed bin $[V_{min} ; V_{max}]$;

p_i and p_j are respectively the distance at which the transponder response has been detected in recurrence i and in recurrence j;

t_i and t_j respectively the instant of emission of the interrogation in recurrence i and in recurrence j;

$\delta\rho$ is a parameter defining a tolerance on the measured distances ρ_i and ρ_j;

t_i and t_j are respectively the instant of emission of the interrogation in recurrence i and in recurrence j; and

t_i and t_j are such that $\left|t_i - t_j\right|$ is equal to the duration of the N recurrences corresponding to an azimuthal extent $\Delta\theta$ of the antenna lobe width used by the radar.

16. (**Currently Amended**) A secondary radar comprising ~~a defruiting system as claimed in claim 15.~~:

means for generating and transmitting interrogations;

means for receiving responses transmitted by transponders;

a defruiting system for defruiting the received responses and for keeping only synchronous responses; and

means for processing the synchronous responses;

wherein the defruiting system is the defruiting system as claimed in claim 15.